

February 1980 ACM SIGART Bulletin, Issue 70

Publisher: ACM Press

Full text available: pdf(13,13 MB)

Additional Information: full citation, abstract

In the fall of 1978 we decided to produce a special issue of the SIGART Newsletter devoted to a survey of current knowledge representation research. We felt that there were twe useful functions such an issue could serve. First, we hoped to elicit a clear picture of how people working in this subdiscipline understand knowledge representation research, to illuminate the issues on which current research is focused, and to catalogue what approaches and techniques are currently being developed. Secon ...

6 Computing curricula 2001

September 2001 Journal on Educational Resources in Computing (JERIC)

Publisher: ACM Press

Full text available: pdf(613.63 KB) html(2.78 KB)

Additional Information: full citation, references, citings, index terms

Research papers: correctness and trust: Verifying completeness of relational query



results in data publishing

HweeHwa Pang, Arpit Jain, Krithi Ramamritham, Kian-Lee Tan

June 2005 Proceedings of the 2005 ACM SIGMOD international conference on

Management of data

Publisher: ACM Press

Full text available: pdf(426,37 KB)

Additional Information: full citation, abstract, references

In data publishing, the owner delegates the role of satisfying user queries to a third-party publisher. As the publisher may be untrusted or susceptible to attacks, it could produce incorrect query results. In this paper, we introduce a scheme for users to verify that their query results are complete (i.e., no qualifying tuples are omitted) and authentic (i.e., all the result values originated from the owner). The scheme supports range selection on key and non-key attributes, project as well as ...

8 Fast detection of communication patterns in distributed executions

Thomas Kunz, Michiel F. H. Seuren

November 1997 Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research

Publisher: IBM Press

Full text available: pdf(4,21 MB)

Additional Information: full citation, abstract, references, index terms

Understanding distributed applications is a tedious and difficult task. Visualizations based on process-time diagrams are often used to obtain a better understanding of the execution of the application. The visualization tool we use is Poet, an event tracer developed at the University of Waterloo. However, these diagrams are often very complex and do not provide the user with the desired overview of the application. In our experience, such tools display repeated occurrences of non-trivial commun ...

An abstract machine for tabled execution of fixed-order stratified logic programs
 Konstantinos Sagonas, Terrance Swift



May 1998 ACM Transactions on Programming Languages and Systems (TOPLAS),

Volume 20 Issue 3

Publisher: ACM Press

Full text available: pdf(602.38 KB)

Additional Information: full citation, abstract, references, citings, index terms, review

SLG resolution uses tabling to evaluate nonfloundering normal logic pr ograms according to the well-founded semantics. The SLG-WAM, which forms the engine of the XSB system, can compute in-memory recursive queries an order of magnitute faster than current deductive databases. At the same time, the SLG-WAM tightly intergrates Prolog code with tabled SLG code, and executes Prolog code with minimal overhead compared to the WAM. As a result, the SLG-WAM brings to logic progr ...

Keywords: SLG, WAM, memoing, prolog, stratification theories, tabling

Guidance for the use of the Ada programming language in high integrity systems

B. A. Wichmann
July 1998



ACM SIGAda Ada Letters, Volume XVIII Issue 4

Publisher: ACM Press

Full text available: pdf(2.93 MB)

Additional Information: full citation, abstract, citings, index terms

This paper is the current result of a study by the ISO HRG Rapporteur group which is being circulated for comment. Many people have contributed to this, but those who have either attended two recent meetings of group or have made substantial e-mail comments are: Praful V Bhansali (Boeing, USA), Alan Burns (University of York, UK), Bernard Carre' (Praxis Critical Systems, UK), Dan Craigen (ORA, Canada), Nick Johnson MoD, UK), Stephen Michell (Canada), Gilles Motet (DGEI/INSA, France), George Roma ...

Formal verification in hardware design: a survey

Christoph Kern, Mark R. Greenstreet

ACM Transactions on Design Automation of Electronic Systems (TODAES),

Volume 4 Issue 2

Publisher: ACM Press

Full text available: pdf(411.53 KB)

Additional Information: full citation, abstract, references, citings, index terms

In recent years, formal methods have emerged as an alternative approach to ensuring the quality and correctness of hardware designs, overcoming some of the limitations of traditional validation techniques such as simulation and testing. There are two main aspects to the application of formal methods in a design process: the formal framework used to specify desired properties of a design and the verification techniques and tools used to reason about the relationship between a spec ...

Keywords: case studies, formal methods, formal verification, hardware verification, language containment, model checking, survey, theorem proving

Superscalar design: Characterizing and predicting value degree of use

J. Adam Butts, Gurindar S. Sohi

November 2002 Proceedings of the 35th annual ACM/IEEE international symposium on Microarchitecture

Publisher: IEEE Computer Society Press

Full text available



Additional Information: full citation, abstract, references, citings, index terms

A value's degree of use---the number of dynamic uses of that value---provides the most essential information needed to optimize its communication. We present simulation results demonstrating the properties of degree of use of values, including their predictability: most static instructions generate values with few degrees of use and these exhibit temporal locality. We use these results to guide the design of a degree of use predictor. The development and detailed characterization of this predict ...

Keystroke analysis of free text



Daniele Gunetti, Claudia Picardi

August 2005 ACM Transactions on Information and System Security (TISSEC), Volume 8

Issue 3

Publisher: ACM Press

Full text available: pdf(277.07 KB)

Additional Information: full citation, abstract, references, index terms

Keystroke dynamics can be useful to ascertain personal identity even after an authentication phase has been passed, provided that we are able to deal with the typing rhythms of free text, chosen and entered by users without any specific constraint. In this paper we present a method to compare typing samples of free text that can be used to verify personal identity. We have tested our technique with a wide set of experiments on 205 individuals, obtaining a False Alarm Rate of less than 5&p ...

Keywords: Biometric techniques, identity verification, keystroke analysis of free text

A survey of image registration techniques



Lisa Gottesfeld Brown

December 1992 ACM Computing Surveys (CSUR), Volume 24 Issue 4

Publisher: ACM Press

Full text available: pdf(5,20 MB)

Additional Information: full citation, abstract, references, citings, index terms, review

Registration is a fundamental task in image processing used to match two or more pictures taken, for example, at different times, from different sensors, or from different viewpoints. Virtually all large systems which evaluate images require the registration of images, or a closely related operation, as an intermediate step. Specific examples of systems where image registration is a significant component include matching a target with a real-time image of a scene for target recognition, mon ...

Keywords: image registration, image warping, rectification, template matching

A guided tour to approximate string matching



Gonzalo Navarro

March 2001 ACM Computing Surveys (CSUR), Volume 33 Issue 1

Publisher: ACM Press

Full text available: pdf(1,19 MB)

Additional Information: full citation, abstract, references, citings, index terms, review

We survey the current techniques to cope with the problem of string matching that allows errors. This is becoming a more and more relevant issue for many fast growing areas such as information retrieval and computational biology. We focus on online searching and mostly on edit distance, explaining the problem and its relevance, its statistical behavior, its history and current developments, and the central ideas of the algorithms and their complexities. We present a number of experiments to ...

Keywords: Levenshtein distance, edit distance, online string matching, text searching allowing errors

Residual speech signal compression: an experiment in the practical application of



neural network technology

Lorien Pratt, Kathleen D. Cebulka, Peter Clitherow

Proceedings of the 3rd international conference on Industrial and engineering applications of artificial intelligence and expert systems -Volume 2 IEA/AIE '90

Publisher: ACM Press

Full text available: pdf(1.33 MB)

Additional Information: full citation, abstract, references, index terms

Neural networks are a popular area of research today. However, neural network algorithms have only recently proven valuable to application problems. This paper seeks to aid in the process of transferring neural network technology from research to a development environment by describing our experience in applying this technology. The application studied here is Speaker Identity Verification (SIV), which is the task of verifying a speaker's identity by comparing the speaker's voice ...

Three-dimensional object recognition



Paul J. Besl, Ramesh C. Jain

March 1985 ACM Computing Surveys (CSUR), Volume 17 Issue 1

Publisher: ACM Press

Full text available: pdf(7.76 MB)

Additional Information: full citation, abstract, references, citings, index terms, review

A general-purpose computer vision system must be capable of recognizing threedimensional (3-D) objects. This paper proposes a precise definition of the 3-D object recognition problem, discusses basic concepts associated with this problem, and reviews the relevant literature. Because range images (or depth maps) are often used as sensor input instead of intensity images, techniques for obtaining, processing, and characterizing range data are also surveyed.

Audio-visual multimodal fusion for biometric person authentication and liveness verification

Girija Chetty, Michael Wagner

April 2006 Proceedings of the 2005 NICTA-HCSNet Multimodal User Interaction Workshop - Volume 57 MMUI '05

Publisher: Australian Computer Society, Inc.

Full text available: pdf(719,65 KB)

Additional Information: full citation, abstract, references, index terms

In this paper we propose a multimodal fusion framework based on novel face-voice fusion techniques for biometric person authentication and liveness verification. Checking liveness guards the system against spoof/replay attacks by ensuring that the biometric data is

captured from an authorised live person. The proposed framework based on bi-modal feature fusion, cross-modal fusion as well as 3D shape and texture fusion techniques, allow a significant improvement in system performance against impo ...

Keywords: biometric authentication, liveness verification, multimodal fusion

Auxiliary variables for BDD-based representation and manipulation of Boolean



Gianpiero Cabodi, Paolo Camurati, Stefano Quer

July 1998 ACM Transactions on Design Automation of Electronic Systems (TODAES),

Volume 3 Issue 3

Publisher: ACM Press

Full text available: pdf(419.50 KB)

Additional Information: full citation, abstract, references, index terms

BDDs are the state-of-the-art technique for representing and manipulating Boolean functions. Their introduction caused a major leap forward in synthesis, verification, and testing. However, they are often unmanageable because of the large amount of nodes. To attack this problem, we insert auxiliary variables that decompose monolithic BDDs in smaller ones. This method works very well for Boolean function representation. As far as combinational circuits are concerned, representing their funct ...

Keywords: binary decision diagrams, finite state machines, functional decompositions, reachability analysis

Information retrieval session 8: efficiency: Online duplicate document detection: signature reliability in a dynamic retrieval environment



Jack G. Conrad, Xi S. Guo, Cindy P. Schriber

November 2003 Proceedings of the twelfth international conference on Information and knowledge management

Publisher: ACM Press

Full text available: pdf(215.37 KB)

Additional Information: full citation, abstract, references, citings, index terms

As online document collections continue to expand, both on the Web and in proprietary environments, the need for duplicate detection becomes more critical. Few users wish to retrieve search results consisting of sets of duplicate documents, whether identical duplicates or close matches. Our goal in this work is to investigate the phenomenon and determine one or more approaches that minimize its impact on search results. Recent work has focused on using some form of signature to characterize a do ...

Keywords: data management, doc signatures, duplicate document detection

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Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1090	726/26.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/15 10:55
L2	2	"6701313"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/15 10:59
L3		(passmark or sitekey) and (authentication or verification)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/15 11:13
L4	9	(passmark or sitekey) security	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/15 11:00
L5	0	(authenticity and output\$4 and (discriminating information) and (verification result) and table and register\$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/15 11:16
L6	1	(authenticity and output\$4 and (discriminating information) and (verification result) and table and register\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/15 11:16
L8	0	(authenticity and output\$4 and (verification result) and data and (discriminating information) and register and table).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/15 11:18
S1 .	2	"09248370"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/07/03 16:12
S2	2	"20020059364".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/17 14:12

S3	41	"0046681"	US-PGPUB; USPAT; EPO; JPO; DERWENT;	ADJ	ON	2005/06/17 14:19
S4	0	S3 and geotrust	IBM_TDB US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/17 14:15
S5	0	S3 and coulthard	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/17 14:15
S6	3783	((authenticat\$5 or verif\$6) same ((home page) or (web page)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/17 14:23
S7	5	((authenticat\$5 or verif\$6) same ((home page) or (web page))) same ((display\$4 or output\$4) near3 (information or info or (user data) or credential)) same (signature)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/17 14:25
S8	9	((authenticat\$5 or verif\$6) same ((home page) or (web page))) same ((display\$4 or output\$4) near3 (information or info or (user data) or credential)) same ((signature) or certificat\$3)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/17 14:29
S9	86	(authenticat\$5 or verif\$6) near2 ((home page) or (web page))) same ((display\$4 or output\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/17 14:38
S10	0	713/200.ccls. and (authenticat\$5 or verif\$6) near2 ((home page) or (web page))) same ((display\$4 or output\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/17 14:38
S11	3	(display\$3 or output\$4) same ((motion near2 (mark or image or banner or ad or ads or hot\$1link or advertizement or (pop\$1up screen)) near6 ((user or customer or client) near6 (designat\$3 or specif\$4) near6 (area or position))))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/20 08:14

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S12	640	((encrypt\$3 or cipher\$3 or scrambl\$3) near8 (authentication (information or info)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/20 08:15
S13	18	(display\$3 or output\$3) near5 ((encrypt\$3 or cipher\$3 or scrambl\$3) near8 (authentication (information or info)))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/06/20 08:16
S14	16	(internet or home\$1page) same minutiae	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/06 14:12
S15	1046	(internet or home\$1page) same logo	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/06 14:12
S16	42	(internet or home\$1page) same logo same (authenticat\$4 or verif\$6)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/06 14:59
S17	2	"09248370"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/06 15:46
S18	2	"20010011680".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/06 16:04
S19	18	"5756978"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/06 16:40
S20	0	"08640675".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/06 16:40
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S22	2	"5189482".pn.	US-PGPUB;	ADJ	ON	2005/12/06 16:42
322	-	0103 l02 lp	USPAT; EPO; JPO; DERWENT; IBM_TDB			
S23	167502	(display\$4 or render\$4) with (identification or picture)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/06 16:43
S24	1064	(display\$4 or render\$4) with (identification or picture) same authenticat\$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/06 16:43
S25	48	(display\$4 or render\$4) with (identification or picture) same authenticat\$4 same signature	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/06 16:44
S26	1576	((encrypt\$4 or cipher\$4 or scrambl\$4) near9 ("ssn" or "social security number" or finger\$1print or tumb\$1print or identification) near9 stor\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/07 09:51
S27	863	((encrypt\$4 or cipher\$4 or scrambl\$4) near5 ("ssn" or "social security number" or finger\$1print or tumb\$1print or identification) near5 stor\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/07 10:12
S28	957	726/26.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/15 08:17
S29	33	726/26.ccls. and ((display\$4 or output\$4) same ((certificate or signature) and (identif\$6 or (user near2 name) or "social security number" or "SSN" or (user near2 (picture or face or photo or finger\$1print or thumb\$1print)) or ((actual or physical) near signature))))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/07 10:22

S30	33	726/26.ccls. and ((display\$4 or output\$4) same ((certificate or signature) and ((identif\$6 or (user near2 name) or "social security number" or "SSN" or (user near2 (picture or face or photo or finger\$1print or thumb\$1print)) or ((actual or physical) near signature)))))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2005/12/07 10:24
S31	33	726/26.ccls. and ((display\$4 or output\$4) same (((certificate or signature) and (identif\$6 or (user near2 name) or "social security number" or "SSN" or (user near2 (picture or face or photo or finger\$1print or thumb\$1print)) or ((actual or physical) near signature)))))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ÓΝ	2005/12/07 10:24
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S33	0	sitekey	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/07/03 16:13
S34	0	site\$1key	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/07/03 16:14
S35	0	site\$4key security	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/07/03 16:14
S36	1	(challenge response) near8 (verification data)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/07/05 10:00
S37	3	(challenge response) same (verification data)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/07/05 10:03

S38	0	site\$1key	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 14:50
S39	2	(bank of america) and site near key	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 15:09
S40	4	(bank of america) and site near2 key	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 14:56
S41	27	(site near2 key) near5 (render\$4 or output\$4 or display\$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 14:57
S42	7	(site near2 key) near5 (render\$4 or output\$4 or display\$4) and (authenticat\$5 or verif\$5)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 14:58
S43	1	(PassMark) and RSA	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 15:18
S44	20	(PassMark)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 15:22
S45	0	Two\$1Factor near2 Two\$1Way near2 Authentication	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 15:24
S46	1	Two\$1Factor and passmark	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 15:38
S47	9	passmark security	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 15:59

S48	481	(challenge response) near authentication	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 15:59
S49	10	(challenge response) near authentication and (user verification)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 16:45
S50	664	726/5.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 16:48
S51	767	713/156.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 16:50
S52	414	713/183.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 16:51
S54	0	713/200.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 16:51
S55	2538	713/202	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 16:51
S56	0	713/202.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2006/12/11 16:51